Summer Recess - 2018

SECTION 02 84 34 – POLYCHORINATED BIPHENYL BULK PRODUCT ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. General Provisions of Contract, including General Supplementary Conditions shall apply to this Section.

B. Fuss & O'Neill EnviroScience, LLC (EnviroScience) Feasibility Study-Limited Hazardous Building Materials Inspection Report dated May 16, 2017.

C. Hazardous Materials Abatement Drawing HM-01

D. Polychlorinated Biphenyls (PCBs) Remediation Plan for PCB-Containing Building Materials dated April 24, 2018 (Included as Attachment B to specs).

1.2 CONSULTANT

A. The Owner shall retain a Consultant for the purposes of project management and monitoring during Polychlorinated Biphenyl (PCB) Bulk Product Waste Abatement. The Consultant will represent the Owner in all phases of the abatement project at the discretion of the Owner. The PCB Abatement Contractor, Asbestos Abatement Contractor, and/or Demolition Contractor (collectively the "Contractor") shall regard the Consultant's direction as authoritative and binding as provided herein, in matters particularly, but not limited to the following:

1. Work area approval
2. Monitoring results review
3. Various segments of work completion
4. Abatement final completion
5. Data submission review
6. Daily field punch list items

1.3 SCOPE OF WORK

A. Work outlined in this Section includes all work necessary for the removal and disposal of the greater than or equal to (≥) 50 parts per million (ppm) PCB-containing material (PCB Bulk Product Waste) impacted during the interior masonry remediation at the central hub part of the school (the "Work") at the John F. Kennedy Middle School located at 155 Raffia Road, Enfield, Connecticut (the "Site").

B. The Work of this Section includes the following:

1. Site preparation and controls to facilitate remediation of PCB Bulk Product Waste. Containment procedures for materials referenced for the abatement zone must be utilized for PCB Bulk Product Waste removal.
2. Health and Safety in accordance with Occupational Safety and Health Administration (OSHA) requirements.

3. Removal, packaging, transportation, and disposal of Gray vertical interior masonry joints as PCB Bulk Product Waste. Work includes the removal and disposal of adjacent masonry substrate 2 inches from each side of the masonry joint the entire length of the wall as PCB Bulk Product Waste. Note that these materials do not contain asbestos.
4. ***PCBs remediation of Gray vertical interior masonry joints and adjacent masonry contaminated substrate will be limited to the Central Hub at the school.***
5. Removal, packaging, transportation, and disposal of containment, personal protection equipment (PPE), cleaning materials and supplies, and waste generated during removal of PCB Bulk Product Waste as PCB Remediation Waste at a facility permitted to accept PCB Remediation Waste.
6. Cleaning of the work areas following complete removal of PCB Bulk Product Waste and PCB Remediation Waste.
7. Recordkeeping and distribution as required in accordance with EPA Title 40 CFR, Part 761.125 (c)(5).

1.4 USE OF THE CONTRACT DOCUMENTS

A. It shall be incumbent upon the Contractor to visit the Site and determine what exists, its condition, and what will be required to accomplish the Work intended by the Contract Documents. *No increase in the Contract Sum will be permitted as a result of the Contractor's failure to visit the Site and understand the existing conditions.*

B. All work shall comply with the Contract Documents and with applicable codes, laws, regulations, and ordinances wherever applicable. The most stringent of all the foregoing shall govern the Work.

C. It is not intended that the Specifications show every detail of the Work, but the Contractor shall be required to furnish within the Contract Sum all materials and labor necessary for the completion of the Work in accordance with the intent of the Specifications.

D. In case of ambiguity among the Contract documents, the more stringent requirement as determined by the Consultant shall prevail.

E. The Work of this Contract includes making modifications as necessary, subject to approval by Owner in consultation with the Consultant, to correct any conflicts between Contract Documents.

F. All items, not specifically mentioned in the Specifications, but implied by trade practices to complete the Work, shall be included.

1.5 SITE EXAMINATION

A. It is understood that the Contractor has examined the Site and made their own estimates of the Site facilities and difficulties attending the execution of the Work, and has based their bid price thereon.

B. Except for unforeseeable concealed conditions as determined by the Consultant, the Contractor shall make no claim for additional cost due to the existing Site conditions.

1.6 CONTRACTOR QUALIFICATIONS

A. All bidders shall submit a record of prior experience in PCB Bulk Product Waste abatement projects, listing no less than three completed projects in the past year, with all projects of similar size and scope. The Contractor shall list the experience and training of the project supervisor and all on-site personnel. The information to be included is as follows:

1. Project Name and Address
2. Owner's Name and Address
3. Architect/Consultant
4. Contract Amount
5. Date of Completion
6. Extras and Changes

B. Submit a written statement regarding whether the Contractor has ever been cited for non-compliance with federal or state regulations pertaining to worker protection, removal, transport, or disposal related to PCBs or other hazardous materials.

1.7 CONSTRUCTION PROGRESS SCHEDULE

A. To assure adequate planning and execution of the Work and to assist the Consultant in reviewing the justification for the Contractor's applications for payment, the Contractor shall prepare and maintain a detailed Progress Schedule.

B. The Contractor shall supervise and direct all work of theirs and other trades using their best skill and attention. The Contractor shall be solely responsible for all construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work under the Contract.

C. Due to the nature of this construction work, the scheduling or phasing of work under this Contract may be adjusted by the Owner. As long as the scope of work is not altered, adjustments to the project phasing shall have no effect on the contract price.

D. The Contractor and any Subcontractors shall attend a pre-construction meeting. The assigned Supervisor must attend this meeting.

1.8 TESTING LABORATORY SERVICES

A. The Contractor shall submit to the Consultant the name, address, and qualifications of proposed laboratories intended to be utilized for sample analysis, as required by this Section.

1.9 ADDITIONAL GENERAL REQUIREMENTS

A. The Contractor shall employ a competent Supervisor with at least three years of experience on projects of similar scope and magnitude, who shall be responsible for all work involving $\geq$ 50 ppm PCB abatement, as described in this Specification, and defined in applicable regulations, and have full-time daily supervision of the same. The Supervisor shall be the competent person as defined by OSHA regulations.

B. The Contractor shall furnish all labor, materials, facilities, equipment, installation services, employee training, permits, licenses, certifications, agreements, and incidentals necessary to

perform the specified work. Work shall be performed in accordance with the Contract Documents, the latest regulations from OSHA, the United State Environmental Protection Agency (EPA), and all other applicable federal, state, and local agencies. Whenever the requirements of the above references conflict or overlap, the more stringent provision shall apply.

C. All project personnel engaged in the work covered under this section shall be trained in accordance with OSHA Title 29 CFR, Parts 1910.1000 and 1910.1200.

D. This Section specifies the procedures for removal of an existing material containing PCBs $\geq$ 50 ppm, in the form of interior vertical masonry expansion joints caulking and adjacent substrate as PCB Bulk Product Waste. Note that these materials do not contain asbestos.

E. This Section also specifies the procedures for removal of containment, PPE, cleaning materials and supplies, and waste generated during removal of PCB Bulk Product Waste and disposal of containment, PPE, cleaning materials and supplies, and waste generated during removal of PCB Bulk Product Waste as PCB Remediation Waste.

F. Subsequent cleaning of all adjacent surfaces upon completion of Work is also included in this Section.

G. Disturbance or removal of PCB-containing material may cause a health hazard to workers and building occupants. The Contractor shall disclose to workers, supervisory personnel, sub-contractors, and consultants who will be at the Site of the seriousness of the hazard and proper work procedures that must be followed.

H. During performance of the Work, workers, supervisory personnel, Subcontractors, or consultants who may encounter, disturb, or otherwise function in the immediate vicinity of the PCB-containing material, shall take continuous measures as necessary to protect workers from the hazard of exposure. Such measures shall include the procedures and methods described in this Section, OSHA regulations, EPA regulations, and local requirements, as applicable.

I. If requested or required by local, state, federal, and any other authorities having jurisdiction over such work, the Contractor shall allow the Work of this Contract to be inspected. The Contractor shall immediately notify the Owner and the Consultant, and shall maintain written evidence of such inspection for review by the Owner and the Consultant.

J. The Contractor shall incur the cost of all fines resulting from regulatory non-compliance, as issued by federal, state, and local agencies. The Contractor shall incur the cost of all work requirements mandated by federal, state, and local agencies as a result of regulatory non-compliance, or negligence.

K. The Contractor shall immediately notify the Owner and Consultant of the delivery of all permits, licenses, certificates of inspection, of approval, or occupancy, etc., and any other such instruments required under codes by authorities having jurisdiction, regardless of who issued, and shall cause them to be displayed to the Owner and Consultant for verification and recording.

1.10 PROJECT DESCRIPTION

A. The base bid includes the removal, packaging, transporting, and disposal of the PCB Bulk Product Waste and PCB Remediation Waste as identified herein, conducted by workers in accordance with OSHA, EPA, and Connecticut Department of Energy and Environmental Protection (CTDEEP) regulations. The base bid will include the cost for removal, packaging, transporting, and disposing PCB- Bulk Product Waste and PCB Remediation Waste.

B. The quantities listed herein are estimates only, and should be verified on-site by the Contractor.

C. PCB waste you generate will have to be disposed as a $\geq$ 50 PPM PCB waste under 761.62

D. This bid includes the following PCB Bulk Product Waste and PCB Remediation Waste:

BASE BID – PCB BULK PRODUCT WASTE

LOCATION	MATERIAL TYPE	ESTIMATED QUANTITY	NOTES
1967 Original Building – Single Systems	Light Gray Interior Vertical Masonry Expansion Joint Caulking Compounds and Adjacent masonry- *Remove 2" of all vertical masonry from adjacent caulk joint from both sides (2 " on each side) of expansion Joint to include foam backing within the joint- fill entire wall void with sound attenuation batt insulation*	~900 LF vertical joints (28 locations-11 locations have expansion joint caulking on both sides) ~225 SF of masonry substrate materials	1, 2, 3, 4,5

BASE BID – PCB REMEDIATION WASTE

LOCATION	MATERIAL TYPE	ESTIMATED QUANTITY
1967 Original Building – Single Systems	Containment, PPE, Cleaning Materials & Supplies, & Waste Generated During Removal of PCB Bulk Product Waste	ALL

Notes:

1. Quantities shall be verified by Contractor during the time of mandatory the walk-through. Discrepancies of amounts and/or locations of asbestos-containing materials shall be addressed prior to bidding the work to the Owner and Consultant.
2. Base Bid shall also include packaging, transporting, and disposing of the >50 ppm PCB Bulk Product Waste as defined in the following Section 1.13.
3. Includes the removal of source materials and adjacent masonry brick materials *(2 " on each side) of expansion Joint to include foam backing within the joint* in their entirety as PCB Bulk Product Waste.
4. Contractor shall remove and salvage for reinstallation all ceiling tiles as required to access and cut masonry above finished ceiling in the event ceiling grid must be removed, contractor shall patch to match existing upon completion of abatement
5. Existing gypsum board covers to be removed and replaced by "Owner"

E. The Contractor shall be responsible for providing temporary water, power, and heat as needed at the Site. Temporary lighting within the work areas must be connected to Ground Fault Circuit Interrupter (GFCI) power panels, installed by a State of Connecticut-licensed electrician, permitted as required, and located outside of the work area.

1.11 DEFINITIONS

A. The following definitions relative to PCB abatement shall apply:

1. Abatement - Procedures to control PCB release from PCB Bulk Product Waste and PCB Remediation Waste; includes removal, encapsulation, and enclosure.
2. Air Monitoring - The process of measuring PCB concentrations of an area or exposure of a person.
3. CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act (Title 42 CFR, Parts 9601-9657).
4. Chemical Waste Landfill - A landfill at which protection against risk of injury to health or the environment from migration of PCBs to land, water, or the atmosphere is provided from PCBs and PCB Items deposited therein by locating, engineering, and operating the landfill as specified in EPA Title 40 CFR, Part 761.75.
5. Cleanup Site - The areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of a cleanup of PCB Remediation Waste, regardless of whether the Site was intended for management of waste.
6. Competent Person - As defined by OSHA, a representative of the Contractor who is capable of identifying existing PCBs hazards in the workplace and selecting the appropriate control strategy for PCB exposure. Person who has authority to take prompt corrective measures to eliminate such hazards during PCB removal.
7. Consultant – Fuss & O'Neill EnviroScience, LLC
8. Containment – An enclosure within the building which establishes a contaminated area, and surrounds the location where PCB and/or other toxic or hazardous substance removal is performed, and establishes a Control Work Area.
9. Designated Facility – An off-site disposer or commercial storer of PCB-containing waste designated on the manifest as the facility that will receive a manifested shipment of PCB containing waste.
10. Disposal – An intentional or accidental act of discarding, throwing away, completing, or terminating the useful life of PCBs and PCB-containing items. Disposal includes spills, leaks, and other uncontrolled discharges of PCBs, as well as actions related to containing, transporting, destroying, degrading, decontaminating, or confining PCBs and PCB items.
11. DOT – The United States Department of Transportation.
12. EPA Identification Number - The 12-digit number assigned to a facility by EPA upon notification of PCB waste activity under EPA Title 40 CFR, Part 761.205.
13. Excluded PCB Product – A PCB-containing material which is determined by laboratory analysis to contain concentrations of PCBs less than 50 ppm, and meets the requirements of EPA Title 40 CFR, Part 761.3.
14. Fixed Object – Mechanical equipment, electrical equipment, fire detection systems, alarms, or all other fixed equipment, fixtures, or items which cannot be removed from the work area.
15. Generator of PCB Waste - Any person who acts, processes, or produces PCBs that are regulated for disposal under EPA Title 40 CFR, Part 761, Subpart D, whose act first causes PCBs or PCB-containing -items to become subject to the disposal requirements of

EPA Title 40 CFR, Part 761, Subpart D, or who has physical control over the PCBs when a decision is made that the use of the PCBs has been terminated, and is therefore subject to the disposal requirements of EPA Title 40 CFR, Part 761, Subpart D. Unless another provision of EPA Title 40 CFR, Part 761 specifically requires a site-specific meaning, "generator of PCB waste" includes all of the sites of PCB waste generation owned or operated by the person who generates PCB waste.

16. GFCI – Ground Fault Circuit Interrupter
17. HEPA – High Efficiency Particulate Air
18. HEPA Filter - Filter in compliance with ANSI Z9.2 1979.
19. HEPA Vacuum Equipment - Vacuum equipment equipped with a HEPA filter system for filtering the air effluent.
20. High Occupancy Area – Any area where PCB Remediation Waste has been disposed on-site and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is: 840 hours or more (an average of 16.8 hours or more per week) for non-porous surfaces and 335 hours or more (an average of 6.7 hours or more per week) for PCB Remediation Waste. Examples might include a residence, school, day care center, sleeping quarters, a single or multiple occupancy 40-hours per week work station, a school classroom, a cafeteria in an industrial facility, a control room, or a work station at an assembly line.
21. Incinerator - An engineered device using controlled flame combustion to thermally degrade PCBs and PCB Items. Examples of devices used for incineration include rotary kilns, liquid injection incinerators, cement kilns, and high temperature boilers.
22. Laboratory - A facility that analyzes samples for PCBs and is unaffiliated with any entity whose activities involve PCBs.
23. Large PCB Mark (ML) - Mark that includes letters and striping on a white or yellow background, and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB Article, PCB Equipment, or PCB Container. The size of the mark shall be at least six inches (6") on each side. If the PCB Article or PCB Equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of two inches on each side.
24. Liquid PCBs – A homogenous flowable material containing PCBs, and no more than 0.5 percent by weight of non-dissolved material.
25. Low Occupancy Area - Any area where PCB Remediation Waste has been disposed on-site, and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is: less than 840 hours (an average of 16.8 hours per week) for non-porous surfaces and less than 335 hours (an average of 6.7 hours per week) for PCB Remediation Waste. Examples might include an electrical substation or a location in an industrial facility where a worker spends small amounts of time per week (such as an un-occupied area outside a building, an electrical equipment vault, or in the non-office space in a warehouse where occupancy is transitory).
26. Manifest – The shipping document EPA form 8700–22, and any continuation sheet attached to EPA form 8700–22, originated and signed by the generator of PCB-containing waste.
27. Mark – The descriptive name, instructions, cautions, or other information applied to PCBs, and PCB Items, or other objects.
28. Marked - The marking of PCB Items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, fixation of an adhesive label, or by any other method that meets the requirements of the EPA Title 40 CFR, Part 761.
29. Movable Object - Unit of equipment of furniture in the work area that can be removed from the work area.

30. Municipal Solid Waste - Garbage, refuse, sludges, wastes, and other discarded materials resulting from residential and non-industrial operations and activities, such as household activities, office functions, and commercial housekeeping wastes.
31. Negative Air Pressure Equipment - A portable local exhaust system equipped with HEPA filtration used to create negative pressure in a regulated area (negative with respect to adjacent unregulated areas), and capable of maintaining a constant, low velocity air flow into regulated areas from adjacent unregulated areas.
32. Non-Liquid PCBs - Materials containing PCBs that by visual inspection do not flow at room temperature (25°C or 77°F), or from which no liquid passes when a 100 gram or 100 milliliter representative sample is placed in a mesh number 60 ±5 percent paint filter and allowed to drain at room temperature for five minutes.
33. Non-Porous Surface – A smooth, unpainted solid surface that limits penetration of liquid-containing PCBs beyond the immediate surface. Examples include smooth uncorroded metal, natural gas pipe with a thin porous coating originally applied to inhibit corrosion, smooth glass, smooth glazed ceramics, impermeable polished building stone such as marble or granite, and high density plastics, such as polycarbonates and melamines, which do not absorb organic solvents.
34. On-Site - Within the boundaries of a contiguous property unit.
35. Owner – Guilford Public Schools
36. PCB(s) – A chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances that contain such substance. Refer to EPA Title 40 CFR, Part 761.1(b) for applicable concentrations of PCBs. PCB and PCBs as contained in PCB items are defined in EPA Title 40 CFR, Part 761.3.
37. PCB Article – A manufactured article, other than a PCB Article Container, that contains PCBs and whose surface(s) has been in direct contact with PCBs. Includes capacitors, transformers, electric motors, pumps, pipes, and other manufactured item which (1) is formed to a specific shape or design during manufacture, (2) has end use function(s) dependent in whole or in part upon its shape or design during end use, and (3) has either no change of chemical composition during its end use, or only those changes of composition that have no commercial purpose separate from that of the PCB Article.
38. PCB Article Container – A package, can, bottle, bag, barrel, drum, tank, or other device used to contain PCB Articles or PCB Equipment, and whose surface(s) has not been in direct contact with PCBs.
39. PCB Bulk Product Waste – A waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal is greater than (≥) 50 ppm PCBs. Does not include PCBs or PCB Items regulated for disposal under EPA Title 40 CFR Parts 761.60(a)-(c), 7611.61, 761.63, or 761.64. PCB Bulk Product Waste is further defined in EPA Title 40 CFR, Part 761.3.
40. PCB Capacitor – A capacitor that contains ≥ 500 ppm PCBs. Concentration assumptions applicable to capacitors appear under EPA Title 40 CFR, Part 761.2.
41. PCB-Containing Materials – For the purposes of this Work means those materials containing < 50 ppm PCBs, which have been documented as Excluded PCB Products, and are therefore not subject to the requirements of EPA Title 40 CFR, Part 761, but include CTDEEP regulated concentrations of PCBs requiring proper removal and disposal in accordance with this Section.
42. PCB Equipment – A manufactured item, other than a PCB Article Container, which contains a PCB Article or other PCB Equipment, and includes microwave ovens, electronic equipment, and fluorescent light ballasts and fixtures.

43. PCB Item – A PCB Article, PCB Article Container, PCB Container, PCB Equipment, or anything that deliberately or unintentionally contains, or has as a part of it any PCB or PCBs.
44. PCB Remediation Waste – Waste containing PCBs in concentrations greater than 1 ppm as a result of a spill, release, or other unauthorized disposal.
45. PCB Waste(s) – PCBs and PCB Items that are subject to the disposal requirements of EPA Title 40 CFR, Part 761, Subpart D.
46. Porous Surface – A surface that allows PCBs to penetrate or pass into itself including, but not limited to, paint or coating on metal, corroded metal, fibrous glass or glass wool, unglazed ceramics, ceramics with a porous glaze, porous building stone such as sandstone, travertine, limestone, or coral rock, low-density plastics such as Styrofoam™ and low-density polyethylene (poly), coated (varnished or painted) or uncoated wood, concrete or cement, plaster; plasterboard, wallboard, rubber, fiberboard, chipboard, asphalt, or tar paper. For purposes of cleaning and disposing of PCB Remediation Waste, porous surfaces have different requirements than non-porous surfaces.
47. RCRA - The Resource Conservation and Recovery Act (EPA Title 40 CFR, Parts 260 - 265).
48. Regulated Work Area - An area established by the employer to demarcate where PCB abatement is conducted and any adjoining area where debris, and waste from such abatement work accumulate.
49. Standard Wipe Sample – A sample collected for chemical extraction and analysis using the standard wipe test as defined in EPA Title 40 CFR, Part 761.123. Except as designated elsewhere in EPA Title 40 CFR. Part 761, the minimum surface area to be sampled shall be 100 square centimeters (cm^2).
50. Storage for Disposal - Temporary storage area for PCBs that have been designated for disposal.
51. SW–846 - The document having the title "SW-846, Test Methods for Evaluating Solid Waste".
52. Totally Enclosed Manner – A manner that will ensure no exposure of human beings or the environment to a concentration of PCBs.
53. Transfer Facility – A transportation-related facility including loading docks, parking areas, and other similar areas where shipments of PCB waste are held during normal transportation. Transport vehicles are not transfer facilities under this definition, unless they are used for the storage of PCB waste, rather than for actual transport activities. Storage areas for PCB waste at transfer facilities are subject to the storage facility standards of EPA Title 40 CFR, Part 761.65, but such storage areas are exempt from the approval requirements of EPA Title 40 CFR, Part 761.65(d) and the recordkeeping requirements of EPA Title 40 CFR, Part 761.180, unless the same PCB waste is stored there for a period of more than 10 consecutive days between destinations.
54. Transporter of PCB Waste - For the purposes of Title 40 CFR, Part 761, Subpart K, any person engaged in the transportation of regulated PCB waste by air, rail, highway, or water for purposes other than consolidation by a generator.
55. Transport Vehicle – A motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (e.g., trailer, railroad freight car) is a separate transport vehicle. TSCA means the Toxic Substances Control Act (15 U.S.C. 2601 et seq.).
56. TSCA - The Toxic Substances Control Act (15 U.S.C. 2601 et seq.).

1.12 SUBMITTALS

A. The Contractor shall submit the following to the Consultant in one complete package prior to the pre-construction meeting, and no later than 10 business days prior to the anticipated start of the Work:

1. Site-Specific Health and Safety Plan (HASP): The Contractor shall prepare a site-specific HASP plan for protection of workers and control of the work site in accordance with OSHA regulatory requirements (Title 29 CFR, Part 1910.120). The HASP shall govern all work conducted at the site during the removal of PCB-Containing Materials and related debris, waste handling, sampling, waste management, and waste transportation. At a minimum, the HASP shall address the requirements set forth in OSHA Title 29 CFR, Part 1910.120, as further outlined below:
   a. Health and Safety Organization
   b. Site Description and Hazard Assessment
   c. Training
   d. Medical Surveillance
   e. Work Areas
   f. Personal Protective Equipment
   g. Personal Hygiene and Decontamination
   h. Standard Operating Procedures and Engineering Controls
   i. Emergency Equipment and First Aid Provisions
   j. Equipment Decontamination
   k. Air Monitoring
   l. Telephone List
   m. Emergency Response and Evacuation Procedures and Routes
   n. Site Control
   o. Permit-Required Confined Space Procedures
   p. Spill Prevention and Countermeasure Contingency Plan (SPCC)
   q. Heat and Cold Stress
   r. Recordkeeping
   s. Community Protection Plan
2. Employee Training, Medical, and Fit Test Documentation: The Contractor submit the following documentation:
   a. Documentation of 40-Hour OSHA HAZWOPER Training for all employees and Sub-contractors to be used for the removal work.
   b. Medical clearance and respirator fit test records of each employee who may be on the project site.
3. PCB and or other Toxic or Hazardous Substances Disposal Plan: A written plan that details the Contractor's plan for transportation and disposal of PCB-Containing Materials, or other Toxic or Hazardous Substance wastes generated during the project. The Disposal Plan shall identify:
   a. The Contractor's insurance certificate and landfill's operating permits and insurance certificates.
   b. Waste packaging, labeling, placarding, and manifesting procedures.
   c. The name, address, and 24-hour contact number for the proposed treatment or disposal facility, or facilities to which waste generated during the project will be transported.
   d. The name, address, contact person(s) and state-specific permit numbers for proposed waste transporters, and EPA and DOT identification number for firms that will transport PCB-Containing Material waste.

e. The license plate numbers of vehicles to be used in transporting of the waste from the Site to the disposal facility.
f. The route(s) by which the waste will be transported to the designated disposal facility, and states or territories through which the waste will pass.

4. Safety Data Sheets (SDS): SDS and manufacturer's information shall be provided for all chemicals and materials to be used during the project including, but not limited to: specialty cleaners and chemical stripping products.
5. Air Sampling Professional Qualifications: The qualifications of the air sampling professional that the Contractor proposed to use for this project to perform OSHA-required employee exposure monitoring.

B. The following documents shall be submitted to the Consultant within 15 working days following removal of waste from the Site:

1. Waste Profile Sheets
2. Pre-Disposal Analysis Test Results (if required by disposal facility)
3. Waste Manifests signed by the disposal facility
4. Tipping Receipts provided by the disposal facility
5. Certification of Final Treatment/Disposal signed by the responsible disposal facility official.

C. The following shall be submitted to the Consultant at the completion of the Work:

1. Disposal Site Receipts: Copy of waste shipment record(s) and disposal site receipt(s) that indicate that PCB-Containing Materials or other Toxic, or Hazardous Substances materials have been properly disposed.
2. Product Data: Catalog sheets, specifications, and application instructions for any removal products, if used.

1.13 REGULATIONS AND STANDARDS

A. The Contractor shall be solely responsible for conducting this project and supervising all work in a manner that will be in conformance with all federal, state, and local regulations and guidelines pertaining to PCB abatement. Specifically, the Contractor shall comply with the requirements of the following:

1. EPA TSCA (Title 40 CFR, Part 761);
2. OSHA Hazardous Waste Operations and Emergency Response Regulations (Title 29 CFR, Parts 1910.120);
3. OSHA Respiratory Protection Standard (Title 29 CFR, Part 1910.134)
4. OSHA Hazard Communication (Title 29 CFR, Part 1910.1200)
5. Department of Transportation (DOT) Hazardous Waste Transportation Regulations (Title 49 CFR, Parts 170 – 180).
6. CTDEEP Regulations;
7. 2003 International Building Code as adopted by the 2005 State of Connecticut Building Code including the 2009, 2011, and 2013 amendments;
8. Life Safety Code (National Fire Protection Association [NFPA]);
9. Local health and safety codes, ordinances, or regulations pertaining to PCB remediation and all national codes and standards including ASTM, ANSI, and Underwriter's Laboratories.

1.14 POSTING AND RECORD MAINTENANCE REQUIREMENTS

A. The following items shall be conspicuously displayed proximate but outside of removal work areas.

1. Exit Routes: Emergency exit procedures and routes
2. Emergency Phone Numbers: A list indicating the telephone numbers and locations of the local hospital(s); the local emergency squad; the local fire department, the local police department, the Poison Control Center, Chemical Emergency Advise (CHEMTREC), the local Department of Health's local office, the Remediation Contractor (on-site and after hours numbers), and the environmental consultant (on-site and after hours contact numbers).
3. Warning Signs: Warning signs shall be in English and the language of any workers on-site who do not speak English, and be of sufficient size to be clearly legible and display the following or similar language in accordance with OSHA Title 29 CFR, Part 1910.1200:

WARNING
HAZARDOUS WASTE WORK AREA
PCBs-POISON
NO SMOKING, EATING OR DRINKING
AUTHORIZED PERSONNEL ONLY
PROTECTIVE CLOTHING IS REQUIRED IN THIS AREA

In addition, all entrances to work areas shall be posted with a PCB M_L large marker.

B. The Contractor shall maintain the following items on-site and available for review by all employees and authorized visitors:

1. Contractor's Site-Specific HASP.
2. Documentation of Training, Medical Clearance, and Fit Test Records for all employees and the project Supervisor.
3. Codes, Standards, and Publications.
4. SDS for all chemicals used during the project.
5. Copies of Contractor's written hazard communication, respiratory protection, and confined space entry programs.

C. Fees, Permits, and Licenses: The Contractor shall pay all licensing fees, royalties, and other costs necessary for the use of any copyrighted or patented product, design, invention, or processing in the performance of the work specified in this Section.

D. The Contractor shall be solely responsible for costs, damages, or losses resulting from any infringement of these patent rights or copyrights. The Contractor shall hold the Owner and the Consultant harmless from any costs, damages, and losses resulting from any infringement of these patent rights or copyrights.

E. The Contractor shall be responsible for securing all necessary permits for work under this Section, including hauling, removal, and disposal, fire, and materials usage, or any other permits required to perform the specified work.

1.15 MINIMUM REQUIREMENTS FOR WORKER HEALTH AND SAFETY

A. The Contractor is responsible and liable for the health and safety of all on-site personnel and the off-site community affected by the Work. All on-site workers or other persons entering the abatement work areas, decontamination areas, or waste handling and staging areas shall be knowledgeable of and comply with the requirements of the site-specific HASP at all times. The Contractor's HASP shall comply with all applicable federal, state, and local regulations protecting human health and the environment from the hazards posed by the Work.

B. Consistent disregard for the provisions of the HASP shall be deemed as sufficient cause for immediate stoppage of work and termination of the Contract or any Sub-contracts without compromise or prejudice to the rights of the Owner or Consultant.

C. Any discrepancies between the Contractor's HASP and these Specifications or federal, state, and local regulations shall be resolved in favor of the more stringent requirements that provide the highest degree of protection to the project personnel, the surrounding community, and the environment.

D. In addition to exposure concerns relating to the presence of PCBs, other health and safety considerations will apply to the Work. The Contractor shall be responsible for recognizing such hazards and shall be responsible for the health and safety of the Contractor's employees at all times. It is the Contractor's responsibility to comply with all applicable health and safety regulations.

E. The HASP shall be reviewed by all personnel prior to entry into the abatement, decontamination, or waste staging areas. Includes representatives of the Contractor, Owner, Consultant, Subcontractor(s), Waste Transporter or Federal, State, or Local Regulatory Agencies. Such review shall be acknowledged and documented by the Contractor Site Supervisor by obtaining the name, signature, and affiliation of all personnel reviewing the HASP.

F. The HASP shall be maintained so as to be readily accessible and reviewable by all site personnel throughout the duration of the abatement project, and until all waste materials are removed from the Site, and disposed at the appropriate disposal facility.

G. The Contractor Site Supervisor shall be responsible for ensuring that project personnel and site visitors are informed of and comply with the provisions of the HASP.

1.16 WORK AREAS AND ZONES

A. The Contractor shall lay-out and clearly identify work areas in the field. Access by equipment, site personnel, and the public to the work areas shall be limited as follows:

1. Abatement Zone: The Abatement Zone(s) shall consist of all areas where removal of PCB-Containing Materials and other Toxic or Hazardous Substances, and waste handling and staging activities are on-going and the immediately surrounding locale or other areas where contamination could occur. Each Abatement Zone for purposes of removal of PCB-Containing Materials or other Toxic or Hazardous Substances for disposal shall be performed within a regulated work area (refer to Section 3.2 of this Specification) to demarcate work areas from non-work areas. The regulated work area shall be visibly delineated with appropriate warning signs at all approaches to the area (including a large

PCB M L marker), and be restricted from access by all personnel except those directly necessary for the completion of the respective abatement tasks. The Abatement Zones shall be relocated and delineated as necessary as work progresses from one portion of the Site to another, to limit access to each area and to minimize risk of exposure to Site workers and the general public. Access shall be controlled at the periphery of the Abatement Zones to regulate the flow of personnel and equipment into and out of each zone and to help verify that proper procedures for entering and exiting are followed. All persons within the Abatement Zones shall wear the appropriate level of protection established in the Contractor's HASP.

2. Decontamination Zone: The Decontamination Zone is the transition zone between the Abatement Zone and the clean support zone of the project site, and is intended to reduce the potential for contaminants from being dispersed from the Abatement Zone to clean areas of the Site. The Decontamination Zone shall consist of a buffer area surrounding each Abatement Zone through which the transfer of equipment, materials, personnel, and containerized waste products will occur, and in which decontamination of equipment, personnel, and clothing will occur. The Decontamination Zones shall be constructed as a three chamber decontamination unit for workers and a two chamber equipment room for waste load out as detailed in Section 3.3 of this Specification. All emergency response and first aid equipment shall be readily maintained in this zone. All PPE and clothing shall be removed or decontaminated in the Decontamination Zone prior to exiting to the Support Zone.
3. Support Zone: The Support Zone shall consist of the area outside the Decontamination Zones and the remainder of the project site. Administrative and other support functions and any activities that by nature need not be conducted in the Abatement or Decontamination Zone related to the project shall occur in the Support Zone. Access to the Abatement and Decontamination Zones shall be controlled by the Contractor Site Supervisor, and limited to those persons necessary to complete the abatement work, and who have reviewed and signed the HASP.

1.17 PERSONNEL PROTECTIVE EQUIPMENT

A. The Contractor shall be responsible to determine and to provide the appropriate level of PPE in accordance with applicable regulations and standards necessary to protect the Contractor's employees from all hazards present.

B. The Contractor shall provide all employees with the appropriate safety equipment and protective clothing to ensure an appropriate level of protection for each task, taking into consideration the chemical, physical, ergonomic, and biological hazards posed by the Site and Work.

C. The Contractor shall establish in the HASP criteria for the selection and use of PPE.

D. The PPE to be utilized for the project shall be selected based upon the potential hazards associated with the Site and the Work. Appropriate PPE shall be worn at all times within the Abatement Zone.

E. The Contractor shall provide the appropriate level of respiratory protection to all field personnel engaged in activities where respiratory hazards exist, or where there is a potential for such hazard to exit.

F. The Contractor shall provide, as necessary, protective coveralls, disposable gloves and other protective clothing for all personnel that will be actively involved in abatement activities or waste handling activities, or otherwise present in the Abatement Zones. Coveralls shall be TyvekTM or equivalent material. Should the potential for exposure to liquids exist, splash resistant disposable suits shall be provided and utilized.

G. Protective coveralls, and other protective clothing shall be donned and removed within the Decontamination Zone and shall be disposed at the end of each day. Ripped coveralls shall be immediately replaced after appropriate decontamination has been completed to the satisfaction of the Contractor Site Supervisor. Protective clothing shall not be worn outside of the Decontamination Zone.

H. Hard hats, protective eyewear, rubber boots, and/or other non-skid footwear shall be provided by the Contractor as required for workers and authorized visitors.

I. All contaminated protective clothing, respirator cartridges and disposable protective items shall be placed into proper containers to be provided by the Contractor for transport and proper disposal in accordance CTDEEP regulations.

1.18 EMERGENCY EQUIPMENT AND FIRST AID REQUIREMENTS

A. At a minimum, the Contractor shall provide and maintain at the Site the following Emergency and First Aid Equipment:

1. Fire Extinguishers: A minimum one fire extinguisher shall be supplied and maintained at the Site by the Contractor throughout the duration of the Work. Each extinguisher shall be a minimum of a 20-pound Class ABC dry fire extinguisher with Underwriters Laboratory approval per OSHA Title 29 CFR, Part 1910.157.
2. First Aid Kit: A minimum one first aid kit meeting the requirements of OSHA Title 29 CFR, Part 1910.151 shall be supplied and maintained at the Site by the Contractor throughout the duration of the Work.
3. Communications: Telephone communications (either cellular or land line) shall be provided by the Contractor for use by site personnel at all times during the Work.

B. The Contractor Site Supervisor shall be notified immediately in the event of personal injury, potential exposure to contaminants, or other emergency. The Contractor Site Supervisor shall then immediately notify the Owner and Consultant.

1.19 STANDARD SAFETY AND HEALTH PROCEDURES AND ENGINEERING CONTROLS

A. The following provisions shall be employed to promote overall safety, personnel hygiene and personnel decontamination:

1. Each Contractor or Subcontractor shall ensure that all safety equipment and protective clothing to be utilized by its personnel is maintained in a clean and readily accessible manner at the Site.
2. All prescription eyeglasses in use on this project shall be safety glasses conforming to ANSI Standard Z87.1. No contact lenses shall be allowed on the Site.
3. Prior to exiting the delineated Decontamination Zone(s), all personnel shall remove protective clothing, and place disposable items in appropriate disposal containers to be dedicated to that purpose. Following removal of PPE, personnel shall thoroughly wash

and rinse their face, hands, arms and other exposed areas with soap and tap water wash and subsequent tap water rinse. A fresh supply of tap water shall be provided at the Site on each work day by the Contractor for this purpose.

4. All PPE used on-site shall be decontaminated or disposed at the end of each work day. Discarded PPE shall be placed in sealed DOT-approved 55-gallon drums for off-site disposal.
5. Respirators shall be dedicated to each employee, and not interchanged between workers without cleaning and sanitizing.
6. Eating, drinking, chewing gum or tobacco, smoking, and any other practice that increases the likelihood of hand to mouth contact shall be prohibited within the delineated abatement and decontamination work zones. Prior to performing these activities, each employee shall thoroughly cleanse their face, hands, arms and other exposed areas.
7. All personnel shall thoroughly cleanse their face hands, arms and other exposed areas prior to using toilet facilities.
8. No alcohol, illicit drugs, or firearms will be allowed on the Site at any time.
9. Contact with potentially contaminated surfaces should be avoided, if possible. Field personnel should minimize walking through standing water/puddles, mud, or other wet or discolored surfaces, kneeling on the ground, and placing equipment, materials or food on the ground, or other potentially contaminated surface.
10. The use of the "Buddy System" shall be employed at all times while conducting work at the Site. Each employee shall frequently monitor other workers for signs of heat stress or chemical exposure or fatigue: periodically examine others PPE for signs of wear or damage, routinely communicate with others, and notify the Contractor Site Supervisor in the case of an emergency.

B. Workers must wear protective suits, protective gloves, eye protection, and a minimum of half-face air-purifying respirator with dual HEPA filter cartridges (P100). Respiratory protection shall be in accordance with OSHA Title 29 CFR, Part 1910.134 and ANSI Z88.2.

C. Workers must be trained per OSHA requirements, have medical clearance, and must have recently received pulmonary function test (PFT) and respirator fit test by a trained professional.

1. A personal air sampling program shall be in place, as required by OSHA.
2. The use of respirators must also follow a complete written respiratory protection program as specified by OSHA.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description.

B. Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with PCBs shall be decontaminated or disposed as PCB waste.

C. Polyethylene (poly) sheeting in a roll size to minimize the frequency of joints shall be delivered to the Site with factory label indicating 4 or 6-mil thickness.

D. Poly disposable bags shall be 6-mil thickness with pertinent pre-printed label. Tie wraps for bags shall be plastic, five-inches long (minimum), pointed and looped to secure filled plastic bags.

E. Tape or adhesive spray will be capable of sealing joints in adjacent poly and for attachment of poly to finished or unfinished surfaces of dissimilar materials, and capable of adhering under both dry and wet conditions, including use of cleaning products.

F. Cleaning products, such as CapsurTM, TechXtractTM, or equivalent, shall be utilized at the Contractor's discretion. Cleaning products shall be used in decontaminating porous and non-porous surfaces to remain. All such products shall be utilized in accordance with manufacturer's specifications as intended. The Contractor shall ensure appropriate use and disposal associated with use in accordance with the SDS for each product utilized.

G. The Contractor shall have available spray equipment capable of mixing wetting agent with water and capable of generating sufficient pressure and volume, and having sufficient hose length to reach all areas with PCBs.

H. The Contractor shall have available enough DOT-approved 17-C or 17-H drums for waste disposal.

2.2 TOOLS AND EQUIPMENT

A. The Contractor shall provide all tools and equipment necessary for PCB removal.

B. The Contractor's air monitoring professional shall have air-monitoring equipment of type and quantity to monitor operations and conduct personnel exposure surveillance per OSHA requirements.

C. The Contractor shall have available sufficient inventory or dated purchase orders for materials necessary for the Work including protective clothing, respirators, filter cartridges, poly of proper size and thickness, tape, and air filters.

D. The Contractor shall provide (as needed) temporary electrical power panels, electrical power cables, and electrical power sources (such as generators). Any electrical connection work affecting the building electrical power system shall be performed by a State of Connecticut-licensed electrician.

E. The Contractor shall have available shower stalls and plumbing to support same to include sufficient hose length and drain system or an acceptable alternate.

F. Vacuum units, of suitable size and capacities for the project, shall have HEPA filter(s) capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter or larger.

PART 3 - EXECUTION

3.1 PRE-CONSTRUCTION MEETING

A. At least one week prior to the start of work a Pre-Construction Meeting will be scheduled, and must be attended by the Contractor and any Sub-contractors. The assigned Contractor Site Supervisor must also attend this meeting.

B. The Contractor shall present a detailed project schedule and project submittal package at the Pre-Construction Meeting. Variations, amendments, and corrections to the presented schedule will be discussed, and the Owner and Consultant will inform the Contractor of any scheduling adjustments for this project.

C. Following the Pre-Construction Meeting, the Contractor shall submit a revised schedule (if needed) no later than one week after the meeting.

3.2 WORK AREA PROTECTION – ABATEMENT ZONE

A. Where necessary, deactivate electrical power. Provide GFCI devices, temporary power, and temporary lighting installed in compliance with the applicable electrical codes. All installations are to be made by a State of Connecticut-licensed electrician, permitted as required, and located outside the work area.

B. Post warning signs in accordance with OSHA Title 29 CFR, Part 1910.1200 at all approaches to the work area(s). Signs shall be conspicuously posted to permit a person to read signs and take precautionary measures to avoid exposure to PCBs or other Toxic or Hazardous Substances. These signs should include the large PCB ML markers at each entrance to the work area.

C. Waste Containers for PCB Bulk Product Waste and PCB Remediation Waste shall be located on-site, and shall be placed adjacent to abatement zone. Containers shall be lined, covered, and secured. The PCB waste containers shall be properly marked as described in EPA Title 40 CFR, Part 761.40. Marking shall include a PCB ML marker formatted in accordance with EPA Title 40 CFR, Part 761.45.

3.3 DECONTAMINATION SYSTEM

A. The Contractor shall establish on-site, a decontamination enclosure consisting of equipment room, shower room, and clean room in series. Decontamination unit shall be remote for exterior work areas and contiguous for interior work areas.

B. Access between rooms in the decontamination system shall be through double flap-curtained openings. The clean room, shower, and equipment rooms within the decontamination enclosure shall be completely sealed.

C. Construct the decontamination system with plastic, wood, or metal framing and cover both sides with a double layer of 6-mil poly, completely sealed with spray adhesive and tape at the joints.

D. The Contractor and the Consultant shall visually inspect barriers routinely to assure effective seal; the Contractor shall repair defects immediately.

3.4 PCB BULK PRODUCT WASTE REMOVAL PROCEDURES

A. The Contractor shall have a designated "competent person" on the Site at all times to ensure proper work practices throughout the project.

B. The Contractor shall regulate the work area as required for compliance with OSHA Title 29 CFR, Part 1910.1200 to prohibit non-trained workers from entering areas where PCBs are to be removed.

C. The Contractor shall establish worker decontamination unit remote from the work area.

D. Materials shall be removed in a manner which does not breakdown the materials into fine dust or powder to the extent feasible. Equipment and tools to be utilized shall include hand tools and mechanical equipment such as demolition hammers, mechanical grinders, etc. to remove materials from adjacent substrates. Mechanical removal equipment shall as appropriate be fitted with HEPA-filtered vacuum attachments.

E. The use of minimal quantities of water to moisten the generated dust prior to collection shall be utilized. Under no circumstances shall the PCB waste show evidence of free liquid water, pooling, or ponding within the waste stream. Any liquid used to wet the dust and debris to control fugitive emissions shall be properly containerized and decontaminated in accordance with EPA Title 40 CFR, Part 761.79(b)(1) or disposed in accordance with EPA Title 40 CFR, Part 761.60(a).

F. Dry or brittle PCB-Containing Material shall be removed with additional engineering controls such as use of a HEPA-filtered vacuum to remove accumulated dust or debris during removal.

G. Sequence of removal shall follow the following general requirements:

H. Site preparation and controls shall be completed. Work shall not proceed until authorized by the Consultant.

1. Contractor shall remove and salvage for reinstallation all ceiling tiles as required to access and cut masonry above finished ceiling in the event ceiling grid must be removed, contractor shall patch to match existing upon completion of abatement.
2. PCB Bulk Product Waste shall be removed in entirety for disposal as PCB Bulk Product Waste, and remove 2" of vertical masonry from adjacent vertical masonry expansion caulk joint from both sides of caulk joint.
3. Following removal, cleaning of work area shall be performed followed by a final visual inspection and verification sampling (if applicable) by the Consultant.
4. Following an acceptable final visual inspection and verification sampling, the containment barriers, PPE, clean materials and supplies, and waste generated during removal of PCB Bulk Product Waste shall be containerized for disposal as PCB Remediation Waste.
5. The work area shall be isolated from non-work areas by air-tight barriers attached securely in place. All openings between the work area and non-work areas including but not limited to windows, doorways, elevator openings, corridor entrances, ventilation openings, drains, ducts, grills, grates, diffusers and skylights, shall be sealed airtight with 6 mil polyethylene sheeting.
6. All movable objects which can be removed from the work area shall be removed. Cleaning of contaminated items shall be performed if the item is to be salvaged or reused.

Otherwise the item shall be properly disposed of as asbestos waste. All non-movable objects in the work area shall be covered with a minimum of 6 mil polyethylene sheeting secured in place.

7. Floor and wall surfaces in the work area shall be covered with polyethylene sheeting or equivalent. All seams and joints shall be sealed with tape or equivalent. Floor covering shall consist of at least two layers of 6 mil polyethylene and must cover at least the bottom 12 inches of adjoining wall. Wall covering shall consist of a minimum of two layers of 4 mil polyethylene sheet which shall overlap the floor covering to prevent leaks. There shall be no seams in the polyethylene sheet at the wall-to-floor joints.
8. Create pressure differential between work areas and uncontaminated areas by the use of acceptable negative air pressure equipment sufficient to provide four air changes per hour and create negative air pressure of -0.02 inches of water column within enclosure with respect to outside area as measured on a water gauge.
9. Work area access shall be restricted to authorized personnel afforded proper respiratory protection and protective clothing.
10. Clean-up procedures shall involve high efficiency particulate air (HEPA) filtration and wet cleaning techniques. Amended water shall be used. The sequence of wet cleaning and HEPA-filtered vacuuming shall be repeated until no visible residue is observed in the work area.
11. Once cleaning is complete, post cleaning verification sampling shall be conducted. If post cleaning verification sampling identifies concentrations of PCBs >1 ppm, then additional cleaning and, if needed, removal of contaminated brick will be conducted. Debris generated during this phase will be disposed of as PCB Remediation Waste.

I. Remove and containerize all visible accumulations of PCB Bulk Product Waste and PCB Remediation Waste. Waste shall be containerized in labeled and signed 6-mil poly disposable bags. Tie wraps for bags shall be plastic, 5-inches long (minimum), pointed and looped to secure filled plastic bags. Disposal bags shall then be placed in steel 55-gallon DOT-approved drums.

J. At any time during PCB abatement should the Consultant suspect contamination of areas outside the work area, the Consultant shall issue a stop work order until the Contractor takes required steps to decontaminate these areas, and to eliminate the causes of such contamination. Unprotected individuals shall be prohibited from entering suspected contaminated areas until air sampling and visual inspections indicate acceptable decontamination.

K. The Consultant shall conduct a final visual inspection of the work area. If residual suspect PCB-containing debris is identified during the final inspection, the Contractor shall comply with the Consultant's request to render the area clean of all residual PCB.

3.5 CLEANING AND DECONTAMINATION

A. The Contractor shall be responsible for complete cleaning and decontamination of the Abatement Zone upon completion of work. The Abatement Zone will be required to meet proposed final visual inspection requirements.

B. The Contractor shall utilize HEPA-filtered vacuum equipment and wet cleaning products to remove all visible dust and debris from all surfaces within the work area. If specialty cleaning products are utilized, the Contractor shall utilize the product(s) in accordance with manufacturer's specifications including any additional safety and disposal requirements for such use.

C. The adjacent brick to remain shall be visually cleaned of residual caulking compounds. Following removal of visible caulking compounds, the brick shall be cleaned with specialty cleaning product.

D. The Contractor shall utilize the product(s) in accordance with manufacturer's specifications including any additional safety and disposal requirements for such use.

E. Any liquid used to wet the dust and debris to control fugitive emissions shall be collected and decontaminated in accordance with EPA Title 40 CFR, Part 761.79(b)(1), or disposed in accordance with EPA Title 40 CFR, Part 761.60(a).

F. All rags and other cleaning materials used to clean the work area shall be properly disposed as PCB Remediation Waste. All PCB Remediation Waste shall be stored for disposal in accordance with EPA Title 40 CFR, Part 761.61(a)(5)(v)(A). All waste containers shall be appropriately marked and labeled in accordance with EPA Title 40 CFR, Parts 761.40 and 761.45.

G. Equipment to be utilized in connection with the removal of PCB Bulk Product Waste including waste collection, or that will or may come in direct contact with the Site contaminants shall be decontaminated prior to leaving the Site to prevent migration of the contaminated residues. Decontamination shall be in accordance with EPA Title 40 CFR, Part 761.79 and Subpart S procedures.

H. All non-disposable equipment and tools employed in the Work will be decontaminated at the conclusion of each work day utilizing the following sequence:

1. Initial tap water rinse to remove gross debris
2. Tap water and hexane or equivalent wash
3. Tap water rinse
4. Second tap water and hexane or equivalent wash
5. Second tap water rinse

I. The wash water and decontamination liquids shall be captured and containerized in DOT approved 55-gallon drums for off-site disposal in accordance with EPA Title 40 CFR, Part 761.60(a).

3.6 CONSULTANT'S RESPONSIBILITIES

A. The Contractor shall monitor air quality within the work area to ascertain the protection of employees and to comply with OSHA regulations.

B. The Consultant's project monitor shall provide continual evaluation of the condition of the building during removal, using their best professional judgments in respect to EPA and CTDEEP regulations.

3.7 CONSULTANT'S INSPECTION RESPONSIBILITIES

A. Consultant may conduct inspections throughout the progress of the removal project. Inspections may be conducted to document the progress of the removal work, as well as the procedures and practices employed by the Contractor.

B. The Consultant may perform the following inspections during abatement activities:

1. Pre-commencement Inspection. Pre-commencement inspections shall be performed at the time requested by the Contractor. The Consultant shall be informed 12-hours prior to the time the inspection is needed. If deficiencies are identified during the pre-commencement inspection, the Contractor shall perform the necessary adjustments to obtain compliance.
2. Work Area Inspection. Work area inspections may be conducted on a daily basis at the discretion of the Consultant. During the work inspections, the Consultant shall observe the Contractor's removal procedures, verify isolation barrier integrity, assess project progress, and inform the Contractor of specific remedial activities if deficiencies are noted.

C. The Consultant shall perform the following inspection during abatement activities:

1. Final Visual Inspection. Upon the request of the Contractor, the Consultant shall conduct a final visual inspection of the work area. The final visual inspection shall be conducted after completion of the final cleaning procedures. The final visual inspection shall verify that all PCB Bulk Product Waste residual debris have been removed from the work area. If during the inspection the Consultant identifies residual dust or debris, the Contractor shall comply with the request of the Consultant to render the area "dust free".

3.8 CONSULTANT'S VERIFICATION SAMPLING

A. The Consultant shall perform post-cleaning verification and post-remediation verification sampling as necessary to determine complete removal of PCB's. Refer to the Performance Based Clean-Up and Disposal Plan for requirements for determination of clearance levels.

B. Post-Remediation verification sampling shall be conducted in a five-foot linear pattern on the interior brick scheduled to remain in the area of the caulking compounds. Sampling shall be conducted in accordance with Sub-Part O of Title 40 CFR, Part 761.

C. Once post-cleaning and post verification sampling has documented the Abatement Zone meets required criteria established in the Sup-Part O of Title 40 CFR, Part 761 of less than or equal to ($\leq$) 1 ppm, the Contractor shall be permitted to breakdown regulated area. These areas shall be subjected to a visual inspection to ensure no visible dust is present.

3.9 MARKING OF WASTE CONTAINERS

A. All waste containers must be marked with the name of the waste contained, the date in which the first material was placed in the vessel, and the last date at which addition of waste occurred. All waste containers must be marked with a large PCB M_L marker.

B. All waste containers containing PCB Bulk Product Waste and PCB Remediation Waste in the form of waste and contaminated debris, containment system components, used PPE, personal and equipment wash water and decontamination fluids, or other wastes generated during the abatement work shall be labeled as follows:

DOT Class 9 UN3432 (solid)
Or UN2315 (liquid) PCB Waste
RQ
Waste for Disposal
Federal law prohibits improper disposal.
If found, contact the nearest police or public safety authority or
The U.S. Environmental Protection Agency.
Generator's Information: _____
Manifest Tracking No.: _____
Accumulation Start Date: _____
EPA ID No.: _____
EPA Waste No.: _____
Total Weight: _____
Container No.: _____
HANDLE WITH CARE

In addition, these containers must be marked with a PCB ML marker.

C. Such marking must be durable, in English and printed on, or affixed to the surface of the package, or on a label, tag or sign, and displayed on a background of sharply contrasting color, is unobscured by labels or attachments, and located away from any other marking (such as advertising) that could substantially reduce its effectiveness.

3.10 ON-SITE WASTE MANAGEMENT AND DISPOSAL OF SOLID HAZARDOUS WASTES

A. All solid waste material, containment system components, used PPE, and other solid wastes generated during the Work, shall be placed directly in appropriate waste receptacles immediately upon removal from its in-situ position. Suitable waste receptacles may consist of roll-off containers or DOT-approved 55-gallon drums.

B. The Contractor shall be responsible for all packaging, labeling, transport, disposal, and recordkeeping associated with PCB Bulk Product Waste and PCB Remediation Waste in accordance with all federal, state, and local regulations.

C. The Contractor shall ensure that the person transporting the waste holds a valid permit issued in accordance with appropriate federal, state, and local regulations.

D. The Contractor shall provide to the transporter at the time of transfer appropriate shipping records or uniform waste manifests as required by the federal, state, and local regulations with a copy to the Owner and Consultant.

E. The Contractor shall maintain proper follow-up procedures to assure that waste materials have been received by the designated waste site in a timely manner, and in accordance with all federal, state, and local regulations.

F. The Contractor shall assure that disposal of PCB Bulk Product Waste and PCB Remediation Waste is at a facility approved to accept such waste(s) and shall provide a tracking/manifest form signed by the landfill's authorized representative.

G. If roll-off containers are to be utilized for containerization of the abatement wastes the following shall apply:

H. All roll-off containers or other similar vessels utilized shall be watertight and lined with 6-mil poly or equivalent impermeable lining, and equipped with a secured and impermeable cover.

I. The impermeable cover shall remain securely in place at all times when material is not being actively placed in the vessels. The Contractor shall be responsible for ensuring that the cover remains securely intact until the container is removed from the Site.

J. If 55-gallon drums are to be utilized for waste containerization, the drums shall consists of suitable DOT-approved 55-gallon drums that are watertight and free of corrosion, perforations, punctures, or other damage. All drums shall be securely covered and sealed at the conclusion of each work day.

K. The waste containers shall remain staged at the Site with a secure impermeable cover in-place until the materials are transported from the Site to be delivered to the designated waste disposal facility.

L. Waste roll-off and barrel staging area shall be designated prior to initiation of the abatement work, and approved by the Consultant. If this area is located outside of the building, the area (or areas) shall be surrounded by a chain-link fence with a minimum height of six feet. The fence shall be labeled with a PCB ML marker.

M. PCB Remediation Waste must be transported by a licensed hauler and shipped as PCB Remediation for disposal in accordance with EPA Title 40 CFR, Part 761.61(b) at one of the following facilities:

1. A chemical waste landfill approved under EPA Title 40 CFR, Part 761.75.

N. Provide required copies of the uniform waste manifests for PCB Remediation Waste to the Owner, waste generation State, and waste destination State, as required.

O. Any PCB liquid water waste shall be properly containerized and decontaminated in accordance with EPA Title 40 CFR, Part 761.79 (b)(1), or disposed in accordance with EPA Title 40 CFR, Part 761.60(a).

P. Any chemicals, solvents or other products used during decontamination shall be properly containerized as PCB liquid waste. Waste must be properly decontaminated in accordance with EPA Title 40 CFR, Part 761.79 (b)(1), or disposed in accordance with EPA Title 40 CFR, Part 761.60(g).

Q. All contaminated waste shall be carefully loaded on trucks or other appropriate vehicles for transport. Before and during transport, care shall be exercised to insure that no unauthorized persons have access to the waste materials.

R. Waste transporters are prohibited from "back hauling" any freight after the PCB waste disposal, until decontamination of the vehicle and/or trailer is assured.

END OF SECTION 028434